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| EXAMINER |
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PATEL, RAJNIKANT B

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| ART UNIT | PAPER NUMBER |
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2838

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09/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/797,791

Applicant(s)

DUERBAUM ET AL.

Examiner

Rajnikant B. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5,9,11-13,16-18 and 23-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5,9,11-13,16-18 and 23-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 5,9,11-13,16-18 and 23-33 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 5,9 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent # 5,363,287) in combination with Raets (U.S. Patent # 5,777,859)

Liu et al. disclose the claimed subject matters as explained in the previous office action (repeated here below for reference), except the utilization of the technique for an inverter in series with the capacitive element, the external inductive element and the primary winding of the transformer. Raets teaches the utilization of the similar technique for an inverter in series with the capacitive element, the external inductive element and

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the primary winding of the transformer (figure 1, item 6-10). It would have been obvious one having an ordinary skill in the art at the time the invention was made to modify Liu et al.'s converter by utilizing the technique taught by Raets. Further Liu et al. discloses the claimed subject matters except that an inverter in series with the capacitive element, the external inductive element and the primary winding of the transformer instead of inverter for, Liu et al. shows that DC-AC-DC converter equivalent is a structure known in the art, therefore, because these two topology were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute inverter for converter.

3. Claims 11-13, 16-18, 23-30 and 32-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent # 5,363,287) in combination with Raets (U.S. Patent # 5,777,859) and further in combination with Steigerwald et al. (U.S. Patent # 4,695,934) and Marson et al. (U.S. patent # 5,077,486).

Liu et al. in combination with Raets disclose the claimed subject matters as explained in the claims 5,9 and 31, above, except the utilization of the technique for the at least two of the secondary windings being electrically separated, the multiple outputs a measuring signal for regulating an output voltage of the inverter, the secondary windings being electrically connected one another, secondary winding connected to a ground potential and a chopped DC voltage signal to be coupled to primary windings (the similar limitation taught by Steigerwald et al. and Marson et al. as explained in the previous office action and the previous office action is repeated here below for reference), It

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would have been obvious one having an ordinary skill in the art at the time Liu et al. in combination with Raets' inverter circuit by technique taught by Steigerwald et al. and Marson et al. for the purpose of increasing the efficiency of the power supply, reducing cost and increasing reliability.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rajnikant B. Patel whose telephone number is 571-272-2082. The examiner can normally be reached on 6.30-5.00; m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Rajnikant B Patel  
Primary Examiner  
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***Previous office action***

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 5 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Liu et al. (U.S. Patent # 5,363,287).

Liu et al. disclose the claimed subject matters a resonant converter (figures 1,2 and 9), including a transformer with a primary winding (figure 1, item T1) and at least two different windings of different winding directions (figure 1, item associated with C4 and C5 and dot (".") representation of direction), a capacitive element in series with the primary windings (figure 1, item C2), at least one external inductive element in series with the capacitive element and the primary winding (figure 1, item L1), a resonant and multiple outputs and frequency (figure 1, item R01-R03 and column 6, line 40-65) and inductance and leakage inductances topology (column 2, line 50-55), at least two of the secondary windings being electrically separated (figure 1). Further circuit meets the structure limitation.

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4. Claims 9,16 rejected under 35 U.S.C. 102(b) as being anticipated by Liu et al. (U.S. Patent # 5,363,287).

Liu et al. disclose the claimed subject matters a resonant converter (figure 1), including a multiple output (figure 1, item -12V, +12V, +5V), a transformer with a primary winding (figure 1, item 12), and at least two secondary windings (figure 1, item T1 with three different windings) and the different winding direction and different ratio are at the top transformer and middle transformer, since the conventional "." Represent the different winding direction (one dot at bottom of coil, the other "." at top). The different ratio of output voltage (12, -12) to number of turns (turns are same for both (n), since voltage magnitude is the same (12)) is different since one ratio positive (12/n), the other is negative (-12/n) and at least two of the secondary windings being electrically separated (figure 1).

***Claim Rejections - 35 USC § 103***

5. Claims 11-12,17-18 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent # 5,363,287) in combination with Steigerwald et al. (U.S. Patent # 4,695,934) and further in combination with Marson et al. (U.S. Patent # 5,077,486).

Liu et al. disclose the claimed subject matters as explained in the claims 5 and 13, above, except the utilization of the technique for the multiple outputs a measuring signal for regulating an output voltage of the inverter, the secondary windings being



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electrically connected one another, secondary winding connected to a ground potential and a chopped DC voltage signal to be coupled to primary windings. Steigerwald et al. teaches the utilization of the similar technique for the multiple outputs a measuring signal for regulating an output voltage of the inverter (column 3, line 55-65) (claim 11), the secondary windings being electrically connected one another (figure 1, item 30-39) (claim 17,25), a secondary winding connected to a ground potential (figure 1, item 40 connected to ground potential)(claim 18,26) and Marson et al. teaches the utilization of the similar technique for a chopped DC voltage signal to be coupled to primary windings (column 3-4, line 1-65) (claim 27). It would have been obvious one having an ordinary skill in the art at the time the invention was made to modify Liu et al.'s power supply by utilizing the technique taught by Steigerwald et al. and Marson et al. for the purpose of increasing the efficiency of the power supply, reducing cost and increasing reliability. In regards to claim 12, the secondary winding being electrically separated from one another (Liu et al's figure 1).

6. Claims 23-24 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent # 5,363,287) in combination with Steigerwald et al. (U.S. Patent # 4,695,934) and further in combination with Marson et al. (U.S. patent # 5,077,486).

Liu et al. disclose the claimed subject matters as explained in the claims 9 and 16, above, except the utilization of the technique for the multiple outputs a measuring signal for regulating an output voltage of the inverter, the secondary windings being

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electrically connected one another, secondary winding connected to a ground potential and a chopped DC voltage signal to be coupled to primary windings. Steigerwald et al. teaches the utilization of the similar technique for the multiple outputs a measuring signal for regulating an output voltage of the inverter (column 3, line 55-65) (claim 28), the secondary windings being electrically connected one another (figure 1, item 30-39) (claim 23), a secondary winding connected to a ground potential (figure 1, item 40 connected to ground potential)(claim 24) and Marson et al. teaches the utilization of the similar technique for a chopped DC voltage signal to be coupled to primary windings (column 3-4, line 1-65) (claim 29-30). It would have been obvious one having an ordinary skill in the art at the time the invention was made to modify Liu et al.'s power supply by utilizing the technique taught by Steigerwald et al. and Marson et al. for the purpose of increasing the efficiency of the power supply and to meet cost effectiveness and reliability. In regards to claim 12, the secondary winding being electrically separated from one another (Liu et al's figure 1).

7. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent # 5,363,287) in combination with Steigerwald et al. (U.S. Patent # 4,695,934) and further in combination with Marson et al. (U.S. patent # 5,077,486).

Liu et al. disclose the claimed subject matters as explained in the claim 15, above, except the utilization of the technique for the multiple outputs a measuring signal for regulating an output voltage of the inverter and a chopped DC voltage signal to be coupled to primary windings. Steigerwald et al. teaches the utilization of the similar

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technique for the multiple outputs a measuring signal for regulating an output voltage of the inverter (column 3, line 55-65) (claim 31) and Marson et al. teaches the utilization of the similar technique for a chopped DC voltage signal to be coupled to primary windings (column 3-4, line 1-65) (claim 27). It would have been obvious one having an ordinary skill in the art at the time the invention was made to modify Liu et al.'s power supply by utilizing the technique taught by Stegerwald et al. and Marson et al. for the purpose of increasing the efficiency of the power supply and reducing cost effectiveness. In regards to claim 12, the secondary winding being electrically separated from one another (Liu et al.'s figure 1).

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 5,8-9,11-13,15-18 and 21-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19

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of U.S. Patent No. 6,721,191 Although the conflicting claims are not identical, they are not patentably distinct from each other because Both the sets of claims directed toward a resonant converter comprising: multiple converter outputs, including a transformer having a primary winding and at least two secondary windings wherein the resonant frequency of the resonant converter determined by the main inductance and a leakage inductance of the transformer and by a capacitive element.

*Rogin B. Lan*  
(PRIMARY EXAMINER)

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